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that of the birds and were it not checked yearly they would soon overrun their range to the exclusion of all the more susceptible forms of life in it and nature's natural adjustment of all varieties of life would be lost; but the chip-

munk during his life undergoes a far greater rate of mortality than the birds do from various sources, so that the large annual increase is almost lost by the advent of the following season and nature's balance is thus maintained.



Nesting of the Rivoli Hummingbird in Southern Arizona

BY O. W. HOWARD, FT. HUACHUCA, ARIZ.

[Read before the Southern Division of the Cooper Orn. Club, July 26, 1900]

DURING the spring of 1899, while I camped near the summit of the Huachuca Mountains, Ariz., I spent considerable time watching the few Rivoli Hummingbirds (*Eugenes fulgens*) which I chanced to see, in hope of finding a nest or two. The birds

but was somewhat encouraged when one morning early in July a female Rivoli Hummer made her appearance at our camp and began pulling from a pine stump some cotton which I had placed there, thinking it might be the means of tracing some bird to its nest.



Photo by C. W. Howard

PLATE I. NEST AND EGGS OF RIVOLI HUMMINGBIRD (*Eugenes fulgens*)

were generally hovering over flowers, evidently feeding, and would soon disappear in the distance, possibly to the maples in the canons below where they usually nest.

I had about given up finding any nests, as the season was well advanced,

After Mrs. Rivoli had helped herself to the dainty morsel she flew in a direct line to the bottom of the canon, about seventy-five yards below our camp, and was soon back for more cotton. I felt certain then of a nest and shortly after my brother located it in a red fir tree.

The nest was about one-third finished so I left it for about ten days and on the 25th of July, with the assistance of Mr. F. C. Willard, his brother Nelson and a Mr. Stuart, I secured a beautiful nest and two slightly incubated eggs. The nest was about fifty feet above the ground and about twenty feet out from the trunk of the tree, saddled on a large horizontal limb near its extremity. I

so that it passed a foot or two above the nest and a little to one side, at an angle of about 45° . The other end was then fastened to a limb at the base of the tree.

When everything was ready two of the boys played tug-of-war at the end of the rope, in order to keep it in position while I slid down to the nest. I was taking the eggs from the nest while the

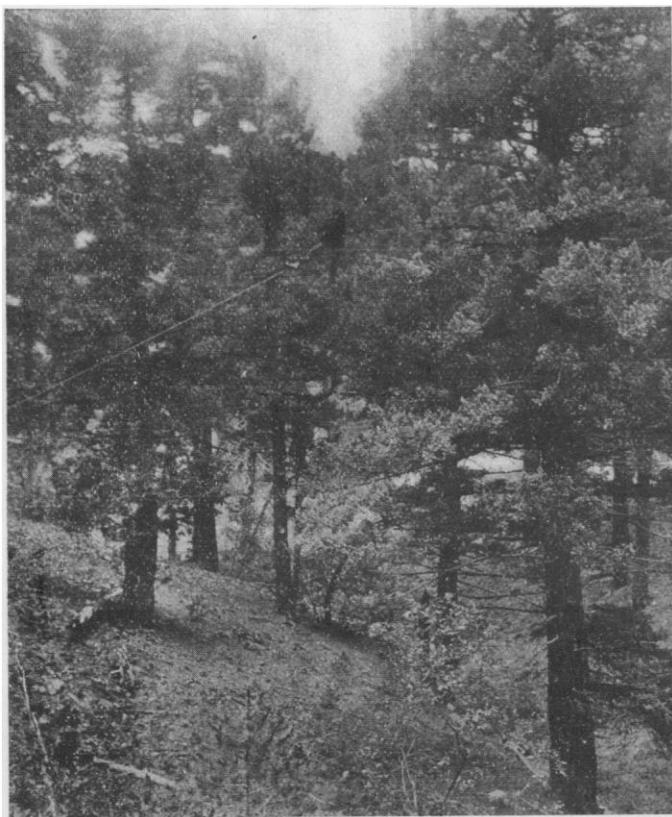


PLATE II. COLLECTING A NEST OF THE RIVOLI HUMMINGBIRD,
(Showing Mr. Howard's method of collecting nests situated on slender limbs)

had thought of removing the eggs from the nest by use of a scoop, and of swinging the limb in by fastening a rope to it from above, but the only safe way to secure the nest was by using a rope as shown in the illustration.

One end of the rope was drawn up over a large limb at the trunk of the tree, diagonally above the nest. Enough rope was then drawn over to permit one end being pulled out from the ground,

third party on the ground took the picture. After placing the eggs safely in my mouth I cut off a large portion of the limb with my hatchet and slid on down to the ground. From the time I started down the rope the whole performance took about one minute. This is only a fair example of how various nests were taken in this manner. The photograph of the nest was taken after the limb had been carried to the ground.